

**OMS GUIDELINES ON MEDICAL AND PSYCHOLOGICAL SUPPORT TO
DETAINEE RENDITION, INTERROGATION, AND DETENTION**
December 2004

The following guidelines offer general references for medical officers supporting the rendition and detention of terrorists captured and turned over to the Central Intelligence Agency for interrogation and debriefing. There are three different contexts in which these guidelines may be applied: (1) during the period of rendition and initial interrogation, (2) during the more sustained period of debriefing at an interrogation site, and (3) the permanent detention of captured terrorists in long-term facilities.

RENDITIONS

Rendition Mission Responsibilities.

A Medical Officer (Physician, Physician Assistant, Nurse Practitioner) from OMS is currently assigned to every rendition detail. The scope of responsibility of the Medical Officer includes, but is not limited to the following:

- Oversight and monitoring of the initial intake of given subject
- Initial acceptance medical evaluation comprised of a brief history and physical examination to identify conditions that may affect the health of the subject during transport as well as to identify and document any existing injury
- Body cavity search
- Monitoring of physical restraint application
- Administration and monitoring of injectable sedatives
- Production of appropriate medical documentation
- Provision of basic and emergency medical care as needed

Standard of Care

The Medical Officer is expected to deliver the highest quality of care possible under the restrictive conditions usually encountered during rendition operations. The background and circumstances of the detainee do not override the obligation to maintain the highest professional and ethical standards and deliver appropriate care.

Medical responsibilities include continued monitoring of the handling of the subject, and the medical officer has the authority to alter current handling if such handling may cause serious or permanent injury to the subject.

Basic Medical Equipment

Standardized rendition medical packs are used during rendition operations. These authorized medical packs contain supplies and equipment necessary to monitor and treat most in-flight medical emergencies. The minimum required medical equipment is as follows:

- Stethoscope
- BP cuff (Automated)
- Pulse oximeter sensor
- Pen light
- Trauma shears
- Gloves
- Lubricant

Rendition Environment

Cultural, security, operational sensitivity, and safety considerations all impact the conditions surrounding initial receipt of a detainee. Thus, flexibility remains essential. The medical officer has to be prepared to provide the initial evaluation under

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Most of the exam may take place while the detainee is hooded and restrained, and other persons beyond the rendition staff may be present. Typically the rendition team wants the intake/transfer completed as quickly as possible. Absence any unusual findings, the limited exam necessary at this stage should be completed within 15 minutes. If additional photo-documentation becomes necessary because of the presence of pre-existing findings, especially signs of prior trauma, this time may be extended briefly. Once the exam is complete, the detainee should be transported on the aircraft in a position assuring that foreign material does not occlude the subject's airway.

Initial History and Physical

English language questioning typically is not allowed during the transfer, so collecting a detailed history often is not possible. Any pertinent history should be obtained from the responsible capture officers prior to the operation. Often this information is limited to any recent major trauma and whether the subject is clinically stable. The physical examination must include but may not be limited to:

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Baseline as well as follow on every six hours Vital Signs consisting of blood Pressure, pulse, respirations, pulse Ox

General – observation for gross abnormalities and any existing injuries or bruising
HEENT

Heart

Lungs

Abdomen

Genital

Musculoskeletal

A cavity search with the intent of locating potential harmful devices must be performed during the acceptance medical evaluation. (This sometimes may be waived if an OMS Medical Officer previously has performed such a search and the subject has remained under Central Intelligence Agency control up to the time of transfer.)

The following “cavities” must searched:

Oral cavity to include under the tongue

Head / Hair/ Behind and in ears

Behind scrotum

Rectum (employing adequate lubricant)

The medical officer shall complete a diagram of the findings of any marks on the body, in addition to filing a report of physical findings.

Monitoring Physical Restraints and Detainee Condition

Restraints (e.g., ankle and wrist) should be applied and/or adjusted so that a space of one finger is maintained between the restraint and subject's tissue. Restraints should not impede circulation or lead to significant abrasions, as these may result in local infection or vascular and neurological damage. Beyond our obligation to protect the health of the detainee, complications of this sort limit or foreclose the Agency's ability to interrogate those affected.

Detainees should receive water during longer flights. Water may be offered through a straw, and should be presented on an as needed basis, but no less frequently than every two hours.

Adequate oxygenation should be ensured through periodic pulse oximetry readings. If readings drop below 94% in an otherwise healthy person, the medical officer should consult with the rendition team leader regarding adjustments to the hood to restore

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adequate oxygen levels, and to physical repositioning if the current position might impede respiration.

Guidelines for the use of sedatives.

At times it may be necessary to sedate a subject during the initial transfer or subsequent transport, to protect either the subject or the rendition security team. Sedatives are not to be used merely for the convenience of the security team. The decision to provide sedation is the responsibility of the Medical Officer, and violent behavior must be witnessed and documented by the Medical Officer and Rendition Team Leader prior to implementing any sedation protocol. Administration of sedative must be documented as to time, medication, amount, route, and any adverse reaction. If sedatives are administered, vital signs are to be taken and documented every 30 minutes.

When necessary, intramuscular administration of sedatives is recommended due to the expectation of restrictive conditions to include hood and restraints as well as to obtain the most immediate effect. Medication is to be given in the following order and dosage:

1. Begin with diazepam 5 mg IM along with haloperidol 5 mg IM and diphenhydramine 100 mg IM.
2. If little or no effect is noted after 15 minutes, repeat dosing in step 1, without the diphenhydramine.
3. May repeat step 1 after another 30 minutes have elapsed, for a total of 3 doses, if required due to continued agitation.

In the event of an overdose of diazepam, Flumazenil should be administered as an antidote., at a dosage of 0.2 – 1 mg IV, given at 0.2 mg per minute. If necessary, a repeat dose of 0.2 – 1 mg IV at the same rate can be provided at 20 minutes. Under no circumstance should more than 3mg of Flumazenil be administered in less than one hour. Potential hypotension resulting from the administration of diazepam should be treated with Metaraminol injection, 2 – 10 mg given IM.

The risk of dyskinesias is always present with the use of neuroleptic agents. The medical officer should be alert for signs of this in the following likely forms and treat as described below:

1. Acute dystonic reaction may take the form of severe limb rigidity with signs of cogwheeling, torticollis (head and neck rigid and turned to either side), or oculogyric crisis (eye muscles locking eyes in upward position). Treatment is

with diphenhydramine 50 mg, which may be repeated every 30 minutes to a total of 3 doses if symptoms persist.

2. Akathisia, a subjective sense of severe motor restlessness, is likely to present as generalized hyperactivity. The treatment is a benzodiazepine, so an additional dose of diazepam 5 mg IM may be given.
3. If the above protocol is implemented, the subject must be kept well hydrated, and the medical officer must monitor body temperature for the rare complication of neuromalignant syndrome. Treatment includes cooling, monitoring vital signs, and administering dantrolene at a dose of 2 mg / kg IV, with additional doses every 10 minutes to a maximum of 10 mg / kg.

Guidelines for Documentation.

A record of all rendition assessments—both intake and during transfer--should be provided to the receiving OMS Medical Officer at the final destination (detention site).

The acceptance physical evaluation must also be reported in cable through approved (b)(3) NatSecAct communications channels. A copy of the intake medical findings should also be included in an electronic file maintained locally on each detainee, which subsequently incorporates all medical evaluations on that individual. This file needs to be accessible to, and updated by successive medical practitioners.

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DETENTION AND INTERROGATION

General intake evaluation

New detainees are to have a thorough initial medical assessment upon arrival at the first Agency detention facility, with a complete, documented history and physical addressing in depth any chronic or previous medical problems. This assessment should especially attend to cardio-vascular, pulmonary, neurological and musculoskeletal findings. (See the Interrogation section, on shackling and waterboard for more specifics.) Vital signs and weight should be recorded, and blood work drawn ("tiger" top [serum separating] and lavender top tubes) for CBC, Hepatitis B and C, HIV and Chemistry panel (to include albumin and liver function tests). Where clinically indicated, additional examinations such as stools for ova and parasites may be undertaken. The examining medical officer should also make particular note of any evidence of injury at the time of intake.

Documented subsequent medical rechecks during the interrogation period should be performed on a regular basis, the frequency being within the judgment of the medical representative and the Chief of Site. The recheck can be more focused on relevant factors. The content of the documentation should be similar to what would ordinarily be recorded in a medical chart. Although brief, the data should reflect what was checked and include negative findings. All assessments should be reported through approved

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communications channels applicable to the site at which the detainee is being held, and are subject to review / release by the Chief of the site. This should include an [redacted] A copy of the medical findings should also be included in an electronic file maintained locally on each detainee, which incorporates all medical evaluations on that individual. This file must be available to successive medical practitioners at site. (b)(3) NatSecAct

Personnel Safety and Detainee Illness

Several detainees have tested positive for blood borne pathogens. Depending on the specific etiology, those detainees may pose a risk to personnel in direct contact through inadvertent or inadvertent shedding of infected body fluids. OMS officers should ensure that personnel handling detainees are aware of potential risks and take appropriate preventive measures, including vaccination against hepatitis B and use of appropriate protective gear. An OMS officer participates in weekly briefings for personnel deploying to detainee sites to discuss the risks involved.

Medical officers should remain vigilant for the development of tuberculosis in the detainee population. The near ubiquitous exposure to TB for our detainee population

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makes routine testing and treatment impractical in the interrogation phase of their detention, and their general good health makes reactivation unlikely. OMS intends to address the issue of chronic exposure and TB conversion when detainees have reached their long term confinement destination, but until that time, careful vigilance by medical officers is required to respond quickly and effectively to any potential active case.

In performing evaluations of detainees, medical officers should work closely with the security and interrogation personnel at site to ensure that the exam is carried out with minimal risk to all personnel involved. Officers should follow the direction of security personnel on safety issues; should bring only the equipment necessary for the exam into the confinement area; and should remove all extraneous items that might be used as a weapon or might reveal the location of the detention facility.

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Captured terrorists turned over to the C.I.A. for interrogation may be subjected to a wide range of legally sanctioned techniques, all of which are also used on U.S. military personnel in SERE training programs. These are designed to psychologically "dislocate" the detainee, maximize his feeling of vulnerability and helplessness, and reduce or eliminate his will to resist our efforts to obtain critical intelligence.

Sanctioned interrogation techniques must be specifically approved in advance by the Director, CTC in the case of each individual case. They include, in approximately ascending degree of intensity:

Shaving
 Stripping
 Hooding
 Isolation
 White noise or loud music (at a decibel level that will not damage hearing)
 Continuous light or darkness
 Uncomfortably cool environment
 Dietary manipulation (sufficient to maintain general health)
 Shackling in upright, sitting, or horizontal position
 Sleep deprivation (up to 48 hours)

Attention grasp
 Facial hold
 Insult (facial) slap
 Abdominal slap
 Sleep deprivation (over 48 hours)
 Water Dousing and tossing
 Stress positions
 --on knees, body slanted forward or backward
 --leaning with forehead on wall
 --leaning on fingertips against wall
 Walling
 Cramped confinement (Confinement boxes)
 Waterboard

In all instances the general goal of these techniques is a psychological impact, and not some physical effect, with a specific goal of "dislocat[ing] his expectations regarding

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the treatment he believes he will receive...." The more physical techniques are delivered in a manner carefully limited to avoid serious physical harm. The slaps, for example, are designed "to induce shock, surprise, and/or humiliation" and "not to inflict physical pain that is severe or lasting." To this end they must be delivered in a specifically prescribed manner, e.g. with fingers spread. Walling is performed only against a springboard designed to be loud and bouncy (and cushion the blow). All walling and most attention grasps are delivered only with the subject's head solidly supported with a towel to avoid extension-flexion injury.

OMS is responsible for assessing and monitoring the health of all Agency detainees subject to "enhanced" interrogation techniques, and for determining that the authorized administration of these techniques would not be expected to cause serious or permanent harm.¹ "DCI Guidelines" have been issued formalizing these responsibilities, and these should be read directly.

Advance Headquarters approval is required to use any physical pressures; technique-specific advanced approval is required for all "enhanced" measures and is conditional on on-site medical and psychological personnel² confirming from direct detainee examination that the enhanced technique(s) is not expected to produce "severe physical or mental pain or suffering." As a practical matter, the detainee's physical condition must be such that these interventions will not have lasting effect, and his psychological state strong enough that no severe psychological harm will result.

The medical implications of the DCI guidelines are discussed below. All medical officers engaged in the RDG program should be familiar with the use and limitations of each physical pressure prescribed by the DCI guidelines; the below discussion describes additional considerations that medical officers must keep in mind to ensure the safety of the detainee. Appendix A summarizes the relationship of constraints on use of physical pressures to the medical rationale behind those constraints.

¹ The standard used by the Justice Department for "mental" harm is "prolonged mental harm," i.e., "mental harm of some lasting duration, e.g., mental harm lasting months or years." "In the absence of prolonged mental harm, no severe mental pain or suffering would have been inflicted." Memorandum of August 1, 2002, p. 15.

² "Psychological personnel" can be either a clinical psychologist or a psychiatrist. Unless the waterboard is being used, the medical officer can be a physician or a PA; use of the waterboard requires the presence of a physician.

Medical treatment

Adequate medical care shall be provided to detainees, even those undergoing enhanced interrogation. Those requiring chronic medications should receive them, acute medical problems should be treated, and adequate fluids and nutrition provided. These medical interventions, however, should not undermine the anxiety and dislocation that the various interrogation techniques are designed to foster. Medical assessments during periods of enhanced interrogation, while encompassing all that is medically necessary, should not appear overly attentive. Follow-up evaluations during this period may be performed in person, in the guise of a guard, or through remote video. All interventions, assessments and evaluations should be coordinated with the Chief of Site and interrogation team members to insure they are performed in such a way as to minimize undermining interrogation aims to obtain critical intelligence.

Medications and nutritional supplements may be hidden in the basic food provided (e.g. as a liquid or thoroughly crushed tablet). If during the initial phase of interrogation detainees are deprived of all measurements of time (e.g., through continuous light and variable schedules), a time-rigid administration of medication (or nutrition) should be avoided. There generally is ample latitude to allow varying treatment intervals.

The basic diet during the period of enhanced interrogation need not be palatable, but should include adequate fluids and nutrition. Actual consumption should be monitored and recorded. Liquid Ensure (or equivalent) is a good way to assure that there is adequate nutrition. Individuals refusing adequate liquids during this stage should have fluids administered at the earliest signs of dehydration; methods of administration are discussed below. For reasons of staff safety, the rectal tube is an acceptable method of delivery of rehydration fluids. If there is any question about adequacy of fluid intake, urine output also should be monitored and recorded.

All medical officers remain under the professional obligation to do no harm. In particular, medical officers should never perform or threaten to perform a medical procedure or intervention that is not medically indicated by the specific circumstances of the detainee. Medical officers must remain cognizant at all times of their obligation to prevent "severe physical or mental pain or suffering."

Uncomfortably cool environments

Detainees can safely be placed in uncomfortably cool environments for varying lengths of time, ranging from hours to days. The length of time will depend on multiple factors, including age, health, extent of clothing, and freedom of movement. Individual tolerance and safety have to be assessed on a case by case basis, and continuously

reevaluated over time. The following guidelines and reference points are intended to assist the medical staff in advising on acceptable lower ambient temperatures in certain operational settings. The comments assume the subject is a young, healthy, dry, lightly clothed individual sheltered from wind, i.e., that they are a typical detainee.

Core body temperature falls after more than 2 hours at an ambient temperature of 10°C/50°F. At this temperature increased metabolic rate cannot compensate for heat loss. The WHO recommended minimum indoor temperature is 18°C/64°F. The "thermoneutral zone" where minimal compensatory activity is required to maintain core temperature is 20°C/68°F to 30°C/86°F. Within the thermoneutral zone, 26°C/78°F is considered optimally comfortable for lightly clothed individuals and 30°C/86°F for naked individuals. Currently, D/CTC policy stipulates 24-26°C as the detention cell and interrogation room temperatures, permitting variations due to season. This has proven more achievable in some Sites than others.

If there is any possibility that ambient temperatures are below the thermoneutral range, they should be monitored and the actual temperatures documented. Occasionally, as part of the interrogation process they are housed in spaces with ambient temperatures of between 13°C/55°F and 16°C/60°F. Unless the detainee is clothed and standing, or sitting on a mat, this exposure should not be continued for longer than 2-3 hours.

At ambient temperatures below 18°C/64°F, detainees should be monitored for the development of hypothermia. This risk is greatest in those who are naked or nearly so, who are in substantial direct contact with a surface that conducts heat away from the body (e.g., the floor), whose restraints severely limit muscle work, who have comparatively little muscle mass, who are fatigued and sleep deprived, and are age 45 or over.

Dietary manipulation during interrogation

During the interrogation phase, detainee diets may be modified to enhance compliance with interrogators and facilitate movement to the debriefing phase. Detainees health should not be jeopardized by such restrictions, however, so medical officers should attend to adequate fluid and nutrition intake. In general, daily fluid and nutritional requirements may be estimated using the following formulae:

Fluid requirement: 35 ml / kg / day. Will alter with ambient temperature, body temperature, level of activity, intercurrent illness. Monitoring of fluid intake and of urine output and specific gravity may be necessary when the medical officer suspects the detainee is becoming dehydrated.

Energy requirement (male): $900 + 10x$ weight in kilograms for basal Kcal requirement; multiply by 1.2 for sedentary activity level, 1.4 for moderate activity level.

Widely available commercial weight loss programs in the US employ diets of 1000 Kcal / day for sustained periods of weeks or longer without required medical supervision in persons voluntarily seeking to lose weight; these diets have proven safe and effective in inducing short term weight loss. Franchised medically supervised programs may employ diets with even lower daily calorie provision (as low as 500 Kcal / day), but do entail some risk because of alterations in serum electrolytes.

Should the interrogation team choose to limit the detainee's food intake, OMS recommends a minimum intake of 1500 Kcalories / day, recognizing that intakes of 1,000 Kcal are safe and sustainable for weeks at a time. The nutrients may be presented as either a balanced liquid supplement, such as Ensure Plus (360 Kcal / can), or a reduction in the detainee's normal solid food intake. If enhanced interrogation methods are contemplated, a liquid diet is appropriate to minimize risk to the detainee of aspiration; a liquid diet is mandatory if use of the waterboard is being contemplated.

Detainees may opt to consume fewer calories, or limit their fluid intake to levels below that consistent with sustaining life (generally 1500 ml / day). Medical officers should monitor such refusals closely, and intervene when such actions may pose an immediate risk to life or permanent harm to health (see below section on Hunger Strikes and Food Refusal). Inadequate fluid intake is the more pressing concern in the interrogation setting, and can usually be prevented with the regular presentation of water to the detainee with encouragement to drink.

Water dousing

Wet skin or clothing places a detainee at much greater risk for hypothermia, so if a partial or complete soaking is used in conjunction with the interrogation, or even for bathing, the detainee must be dry before being placed in a space with an ambient temperature below 26°C/78°F (minimum room temperature allowed under CTC guidelines). See appendix B chart for the relationship of water temperature and duration of exposure to the risk of developing hypothermia. Medical officers should refer to CTC guidelines for a discussion of water dousing techniques, which allow for water to be applied using either a hose connected to tap water, or a bottle or similar container as the water source. Care must be taken to keep water away from the face to avoid risk of accidental ingestion or aspiration.

OMS guidelines for exposure to water are:

- For water temperature of 41 F / 5 C - total duration of exposure not to exceed 20 minutes without drying and rewarming.
- For water temperature of 50 F / 10 C - total duration of exposure not to exceed 40 minutes without drying and rewarming.
- For water temperature of 59 F / 15 C - total duration of exposure not to exceed 60 minutes without drying and rewarming.

These standards are derived from submersion studies, and represent 2/3 of the time at which hypothermia is likely to develop in healthy individuals submerged in water, wearing light clothing. In our opinion, a partial dousing, with concomitant less total exposure and potential heat loss, would therefore be safe to undertake within these parameters. The total dousing time includes both the actual dousing and time in wet clothing. The total dousing time represents a maximum for safety reasons; evidence of developing hypothermia should prompt immediate rewarming and recommendation to terminate water exposure for the session, regardless of the amount of time elapsed.

Signs of mild hypothermia (body temp 90-98°F) include shivering, lack of coordination (fumbling hands, stumbling), slurred speech, memory loss, and pale and cold skin. Detainees exhibiting any of these signs, regardless of ambient temperature or water exposure status, should be allowed some combination of increased clothing, floor mat, more freedom of movement, and increased ambient temperature.

Moderate hypothermia (body temperature of 86-90°F) is present when shivering stops, there is an inability to walk or stand, and/or the subject is confused/irrational. An aggressive medical intervention is warranted in these cases.

White noise or loud music

As a practical guide, there is no permanent hearing risk for continuous, 24-hours-a-day exposures to sound at 82 dB or lower; at 84 dB for up to 18 hours a day; 90 dB for up to 8 hours, 95 dB for 4 hours, and 100 dB for 2 hours. If necessary, instruments can be provided to measure these ambient sound levels. In general, sound in the dB 80-99 range is experienced as loud; above 100 dB as uncomfortably loud. Common reference points include garbage disposer (80 dB), cockpit of propeller aircraft (88 dB), shouted conversation (90 dB), motorcycles at 25 feet (90 dB), inside of subway car at 35 mph (95 dB), power mower (96 dB), chain saw (110 dB), and live rock band (114 dB). For purposes of interrogation, D/CTC has set a policy that no white noise and no loud noise used in the interrogation process should exceed 79 dB.

Shackling and prolonged standing

Shackling in non-stressful positions requires only monitoring for the development of pressure sores with appropriate treatment and adjustment of the shackles as required. Should shackle-related lesions develop, early intervention is important to avoid the development of an interrogation-limiting cellulitis. Cleaning the lesion, and a slight loosening of the shackles, may be all that is required.

If the detainee is to be shackled standing with hands at or above the head (as part of a sleep deprivation protocol), the medical assessment should include a pre-check for anatomic factors that might influence how long the arms could be elevated. This would include shoulder range of motion, pulses in neutral and elevated positions, a check for bruits, and assessment of the basic sensorimotor status of the upper extremities.

Assuming no medical contraindications are found, extended periods (up to 48 hours) in a standing position can be approved if the hands are no higher than head level and weight is borne fully by the lower extremities. Detainees who have one foot or leg casted or who lost part of a lower extremity to amputation should be monitored carefully for the development of excessive edema in the weight-supporting leg. If edema approaches knee level, these individuals should be shifted to a foot-elevated, seated or reclining sleep-deprivation position. In the presence of a suspected lower limb cellulitis, the detainee should be shifted to a seated leg-elevated position, and antibiotics begun. Absent other contraindications, sleep deprivation can be continued in both these circumstances.

Our experience with a number of detainees maintained in the standing position indicates that dependent edema will develop in most detainees; that some will develop reddish streaking along the saphenous route; and that edema will resolve with sufficient rest in a recumbent position. Because the dependent edema will increase over time, regular attention to leg circumference and the fit of shackles is mandatory. In circumstances where shackles are impinging on venous return, substitution of steel link chain, which is adjustable, has relieved that pressure; use of flexcuffs has also proven of value in preventing constriction during shackling.

An occasional detainee placed in a standing stress position has developed lower limb tenderness and erythema, in addition to an ascending edema, which initially has not been easily distinguished from a progressive cellulitis or venous thrombosis. These occurrences typically have been associated with pre-existing abrasions or ulcerations from shackling at the time of initial rendition. In order to best inform future medical judgments and recommendations, the presence of these lesions should be accurately described before the standing stress position is employed. In all cases daily observations should be recorded which document the length of time the detainee has been in the stress position, and level of any developing edema or erythema.

More stressful shackled positions may also be concurred in for shorter intervals, e.g. during an interrogation session or between sessions. The arms can be elevated above the head (elbows not locked) for roughly two hours without great concern. Reasonable judgment should be used as to the angle of elevation of the arms, but must not exceed DCI guidelines.

Periods in this arms-elevated shackle position lasting between two and four hours would merit caution, and subject should be monitored for excessive distress. The detainee should never be required to bear weight on the upper extremities, and the utilization of this technique should not exceed approximately 4 hours in a 24 hour period. If through fatigue or otherwise the detainee becomes truly incapable of supporting himself on his feet (e.g., after 36, 48 hours, etc.), and the detainee's weight is shifted to the shackles, the use of overhead shackles should be discontinued.

Sleep deprivation

Sleep deprivation (with or without associated stress positions) is among the most effective adjuncts to interrogation, and is the only technique with a demonstrably cumulative effect—the longer the deprivation (to a point), the more effective the impact. The standard approval for sleep deprivation, per se (without regard to shackling position) is 48 hours. The amount of sleep required between deprivation periods depends on the intended purpose of the sleep deprivation. If it is intended to be one element in the process of demonstrating helplessness in an unpleasant environment, a short nap of two or so hours would be sufficient. Perceptual distortion effects are not uncommon after 96 hours of sleep deprivation, but frank psychosis is very rare. Cognitive effects, of course, are common. Nevertheless, the medical officer and psychologist should monitor the detainee for evidence of thought disturbance or other mental derangement, and be prepared to intervene should such circumstances arise, including stopping sleep deprivation. If it is desired that the subject be reasonably attentive, and clear-thinking during the interrogation, at least a 6 hour recovery should be allowed. Current D/CTC

policy requires 2 hours sleep once the 48 hour limit has been met during standard interrogation measures.

The maximum time frame permitted under CTC policy for continued sleep deprivation is 180 hours. Recovery from extended periods of sleep deprivation in research settings has occurred with as little as 8 hours sleep. However, the sleep deficit which accrues can generally be estimated at 8 hours plus two hours for each lost sleep cycle except for the last; as a formula, medical officers can estimate that for full recovery, a detainee should be allocated $8 + [(Number\ of\ sleep\ cycles\ lost - 1) \times (6\ hours\ of\ core\ sleep\ per\ cycle) \times (.33)]$. The .33 represent the actual percentage of lost core sleep time that subjects make up for in extended sleep deprivation experiments.

There is little if any research evidence to support a fixed period of time for sleep before resuming sleep deprivation for conditioning purposes (as opposed to full recovery). Sleep deprivation research indicates that core sleep, required for adequate cognitive functioning, consists of 5-6 hours per night, yet most research protocols have allocated a minimum of 8 hours at the end of the planned deprivation period before continuing with subject evaluations. The circumstances that medical officers will be called to advise on in the detainee programs are not ones that have been subject to reported research; thus, medical officer will rely on their clinical judgment, informed by what research results do exist to formulate a safe recommendation to the interrogation team in the event that sleep deprivation will be reinstated following a sleep period. OMS recommends that for periods less than 48 hours, the detainee be allowed a minimum of 2 hours of sleep, and if clear cognition is desired, a minimum of 6 hours. For longer periods of deprivation, at a minimum the detainee should be allowed 8 hours. Should the sleep deprivation modality be ended, then catch-up sleep time should be provided as per the formula in the preceding paragraph. Such catchup need not be taken all at one time; research settings have spread the amount over three days.

NOTE: Examinations performed during periods of sleep deprivation should include the recording of current number of hours without sleep; and, if only a brief rest preceded this period, the specifics of the previous deprivation also should be recorded.

Cramped confinement (Confinement boxes)

Detainees can be placed in awkward boxes, specifically constructed for this purpose. These can be rectangular and just over the detainee's height, not much wider than his body, and comparatively shallow, or they can be small cubes allowing little more than a cross-legged sitting position. These have not proved particularly effective, as they may become a safehaven offering a respite from interrogation. Assuming no significant medical conditions (e.g., cardiovascular, musculoskeletal) are present, confinement in the

small box is allowable up to 2 hours. Confinement in the large box is limited to 8 consecutive hours, up to a total of 18 hours a day.

Waterboard

This is by far the most traumatic of the enhanced interrogation techniques. The historical context here was limited knowledge of the use of the waterboard in SERE training (several hundred trainees experience it every year or two). In the SERE model the subject is immobilized on his back, and his forehead and eyes covered with a cloth. A stream of water is directed at the upper lip. Resistant subjects then have the cloth lowered to cover the nose and mouth, as the water continues to be applied, fully saturating the cloth, and precluding the passage of air. Relatively little water enters the mouth. The occlusion (which may be partial) lasts no more than 20 seconds. On removal of the cloth, the subject is immediately able to breathe, but continues to have water directed at the upper lip to prolong the effect. This process can continue for several minutes, and involve up to 15 canteen cups of water. Ostensibly the primary desired effect derives from the sense of suffocation resulting from the wet cloth temporarily occluding the nose and mouth, and psychological impact of the continued application of water after the cloth is removed. SERE trainees usually have only a single exposure to this technique, and never more than two; SERE trainers consider it their most effective technique, and deem it virtually irresistible in the training setting.

Our very limited experience with the waterboard is different. The subjects were positioned on the back but in a slightly head down (Trendelenburg) position (to protect somewhat against aspiration). A good air seal seemingly was not easily achieved by the wet cloth, and the occlusion was further compromised by the subject attempting to drink the applied water. The result was that copious amounts of water sometimes were used--up to several liters of water (bottled if local water is unsafe, and with 1 tsp salt/liter if significant swallowing takes place). The resulting occlusion was primarily from water filling the nasopharynx, breathholding, and much less frequently the oropharynx being filled--rather than the "sealing" effect of the saturated cloth. D/CTC policy set an occlusion limit of 40 seconds, though this was very rarely reached. Additionally, the procedure was repeated sequentially several times, for several sessions a day, and this process extended with varying degrees of frequency/intensity for over a week.

While SERE trainers believe that trainees are unable to maintain psychological resistance to the waterboard, our experience was otherwise. Some subjects unquestionably can withstand a large number of applications, with no immediately discernable cumulative impact beyond their strong aversion to the experience. Whether the waterboard offers a more effective alternative to sleep deprivation and/or stress positions, or is an effective supplement to these techniques is not yet known.

The SERE training program has applied the waterboard technique (single exposure) to trainees for years, and reportedly there have been thousands of applications without significant or lasting medical complications. The procedure nonetheless carries some potential risks, particularly when repeated a large number of times or when applied to an individual less fit than a typical SERE trainee. Several medical dimensions need to be monitored to ensure the safety of the subject.

Before employing this technique there needs to be reasonable assurance that the subject does not have serious heart or lung disease, particularly any obstructive airway disease or respiratory compromise from morbid obesity. He also must have stable anterior dentition, no recent facial or jaw injuries, and an intact gag reflex. Since vomiting may be associated with these sessions, diet should be liquid during the phase of interrogation when use of the waterboard is likely, and the subject should be NPO (other than water) for at least 4 hours before any session. DCI guidelines require that water used be potable, and salted; normal saline IV solution best fits these requirements. The most obvious serious complication would be a respiratory arrest associated with laryngospasm, so the medical team must be prepared to respond immediately to this crisis; preferably the physician will be in the treatment room. Warning signs of this or other impending respiratory complications include hoarseness, persisting cough, wheezing, stridor, or difficulty clearing the airway. If these develop, use of the waterboard should be discontinued for at least 24 hours. If they recur with later applications of the waterboard, its use should be stopped. Mock applications need not be limited. In all cases in which there has been a suggestion of aspiration, the subject should be observed for signs of a subsequently developing pneumonia.

In our limited experience, extensive sustained use of the waterboard can introduce new risks. Most seriously, for reasons of physical fatigue or psychological resignation, the subject may simply give up, allowing excessive filling of the airways and loss of consciousness. An unresponsive subject should be righted immediately, and the interrogator should deliver a sub-xiphoid thrust to expel the water. If this fails to restore normal breathing, aggressive medical intervention is required. Any subject who has reached this degree of compromise is not considered an appropriate candidate for the waterboard, and the physician on the scene can not concur in further use of the waterboard without specific C/OMS consultation and approval.

A rigid guide to medically approved use of the waterboard in essentially healthy individuals is not possible, as safety will depend on how the water is applied and the specific response each time it is used. The following general medical guidelines are based on very limited knowledge, drawn from very few subjects whose experience and response was quite varied. These represent only the medical guidelines; legal guidelines also are operative and may be more restrictive.

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A series (within a "session") of several relatively rapid waterboard applications is medically acceptable in all healthy subjects, so long as there is no indication of some emerging vulnerability (such as hoarseness, wheezing, persisting cough or difficulty clearing the airways). Several such sessions per 24 hours have been employed without apparent medical complication. The exact number of sessions cannot be medically prescribed, and will depend on the response to each; however, all medical officers must be aware of the Agency policy on waterboard exposure. As of December 2004, CTC guidelines limit such sessions as follows:

- "a. Approvals for use of the waterboard last for only 30 days. During that 30-day period, the waterboard may not be used on more than 5 days during that 30-day period.
- b. The number of waterboard sessions during any given 24-hour period may not exceed two.
- c. A waterboard "session" is the period of time in which a subject is strapped to the waterboard before being removed. It may involve multiple applications of water. A waterboard session may not last longer than two hours.
- d. An "application" during a waterboard session is the time period in which water is poured on the cloth being held on the subject's face. Under the DCI interrogation guidelines, the time of total contact of water with the face will not exceed 40 seconds. The vast majority of applications are less than 40 seconds, many for fewer than 10 seconds. Individual applications lasting 10 seconds or longer will be limited to no more than six applications during any one waterboard session. The Agency will limit the aggregate of applications to no more than 12 minutes in any one 24-hour period."

By days 3-5 of an aggressive program, cumulative effects become a potential concern. Without any hard data to quantify either this risk or the advantages of this technique, we believe that beyond this point continued intense waterboard applications may not be medically appropriate. Continued aggressive use of the waterboard beyond this point should be reviewed by the HVT team in consultation with Headquarters prior to any further aggressive use. (Absent medical contraindications, sporadic use probably carries little risk.) Beyond the increased medical concern (for both acute and long term effects, including PTSD), there possibly would be desensitization to the technique. Sleep deprivation is a medically less risky option, and sleep deprivation (and stress positions) also can be used to prolong the period of moderate use of the waterboard, by reducing the intensity of its early use through the interposition of these other techniques.

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NOTE: In order to best inform future medical judgments and recommendations, it is important that every application of the waterboard be thoroughly documented: how long each application (and the entire procedure) lasted, how much water was used in the process (realizing that much splashes off), how exactly the water was applied, if a seal was achieved, if the naso- or oropharynx was filled, what sort of volume was expelled, how long was the break between applications, and how the subject looked between each treatment.

POST-INTERROGATION DETENTION

OMS' responsibility for the medical and psychological well-being of detainees does not end when detainees emerge from the interrogation phase. Documented periodic medical and psychological re-evaluations are necessary during the debriefing phase that follows interrogation, as well as during subsequent periods of custodial detention. Absent any specific complaint, these can be at approximately one to two monthly intervals, depending on the degree of control the organization maintains over the detainees. Specifically, where USG personnel maintain continuous 24/7 control, bimonthly visits are appropriate, while monthly visits are indicated when such stringent control is not maintained. Acute problems must be addressed in a clinically appropriate timeframe. As during the interrogation phase, all assessments, examinations, and evaluations should be reported through approved [redacted] (b)(3) NatSecAct communications channels applicable to the site in which the detainee is held, and subject to review / release by the Chief of that site.

Detainee weights should be recorded on at least a monthly basis (CTC guidelines prescribe weekly measurements), and assessed for indications of inadequate nutrition. As a rule of thumb, "ideal" weight for height should be about 106 pounds for an individual 5 feet tall, and six pounds heavier for each additional inch of height. Alternately, standardized BMI charts may be used to assess weight for height. Terrorists incarcerated in the Federal prison system whose weights fall below this level are given nutritional supplements. Those falling to 90% of these levels and who are unwilling to take nutrition orally (through hunger strikes) have received forced feedings through a naso-gastric tube. It is possible that a detainee will simply be of slight build, but true weight loss in an already slight individual--especially in association with deliberately reduced intake--may require some intervention.

As the period of interrogation or intense debriefing passes, detainees may have increasing periods of time between debriefing sessions before being transferred elsewhere. Personal hygiene issues could emerge during this time, with the possible development of significant medical problems. It is particularly important that cells be kept clean during this period and that there be provision for regular bathing and dental hygiene, and that detainees be monitored to insure they are involved in self-care.

Psychological problems are more likely to emerge in those no longer in active debriefings, especially those in solitary confinement. The loss of involvement with the debriefing staff should be replaced with other forms of interaction—through daily encounters with more than one custodial staff member, and the provision of language-appropriate reading materials (preferably in Arabic) and other forms of mental stimulation.

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Hunger Strike and Food Refusal

In the event of a hunger strike, medical officers must evaluate each participating detainee for evidence of dehydration and starvation. Most individuals do not face serious adverse effects for at least 48 hours, and the most immediate concern is that of dehydration. The literature indicates that hunger strikers taking in fluids will do quite well for two weeks or more, while those refusing all nutrition face serious consequences after about 72 hours. Thus the first issue medical officers must address is dehydration. In all such circumstances, the goal is the preservation of the life of the detainee, with or without his / her consent.

Forced fluid replacement may be undertaken when the medical officer has reason to believe that the refusal to take fluids poses a significant threat to the life or health of the detainee, that the detainee is aware of this risk, and refuses to resume oral hydration. Two options for forcible rehydration have been employed: rectal tube insertion and intravenous rehydration. Both methods are effective, although because it is less invasive as a medical procedure, the rectal tube is considered by OMS the first line intervention. In either case, the medical officer should consider infusion of several liters of fluid with each treatment on a daily basis until the strike resolves. IV infusion is accomplished in standard medical fashion, with particular attention to securing any metal needles and adequate control of the detainee to prevent removal of the infusion devise before treatment is completed. In the case of rectal infusion, the tube (which may be a plastic catheter line, NG, ET or formal rectal tube) should be lubricated and inserted deep enough to prevent escape of the infused fluid. Both normal saline and lactated Ringers may be used as infusate, as well as D5 ½ NS. Potassium replacement should be considered as well should the strike not resolve quickly.

If the detainee is taking fluids but not nutrients, an intervention can be delayed until such time as weight falls below the 90 percent criterion or the medical officer finds other evidence of deterioration suggesting risk to life or health. (The 10 percent weight loss criteria are derived from the practice of the US Bureau of Prisons.) Should the detainee's weight reach 90 percent of normal, then forcible intervention may be undertaken. Forced feeding is usually accomplished using a nasogastric tube (preferably 8 or 10 FR), which is placed and secured, with position in the stomach ascertained. Liquid sustenance, such as Ensure, may then be infused at a rate not to exceed 400 ml per hour. An NG tube may be left in place if its safety can be assured; otherwise it should be removed and reinserted as needed. Treatment should continue until the detainee has agreed to end the hunger strike, and is witnessed resuming conventional food intake. Note that the rectal tube is not an efficient way to deliver nutrients other than fluids, salts and glucose, and thus is not recommended for feeding (vice fluid replacement).

Additionally, if there are sustained periods without exposure to sunlight, the diet will need to be further supplemented with calcium and vitamin D. Simply increasing the use of multi-vitamins will give too much of one substance but not enough of another. The OMS recommendation for this situation is two 500 mg tablets of plain calcium a day (such as two Os-Cal 500 mg tabs) with one capsule of the prescription Rocaltrol; or alternatively two Centrum Silver tablets (slightly less than the recommendation for vitamin D) with an additional 500 mg of a plain calcium tablet.

Vision problems

Many detainees use eyeglasses, which are usually lost during apprehension, and in any case are not transported to the detention sites. While loss of corrective lenses has not proven an issue in interrogations or debriefings, their provision during the prolonged custodial phase will be a basic medical care issue. OMS will arrange for the refraction of individual inmates and work through CTC to procure glasses with specifications that meet US Bureau of Prisons standards for safety and utility. The use of prescription sports goggles has thus far proven to be an acceptable method of vision correction.

Restraint and Sedation of Violent Detainees

Detainees who are actively threatening violence to themselves or to others have been a rare phenomenon within this program. Nonetheless, the program must be prepared to deal with such an eventuality at any site where it controls the detainee population. These OMS guidelines draw on materials published for use in US correctional settings and on the experience of OMS officers in managing such situations in both hospital and correctional settings.

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The range of options for dealing with violent detainees is wide, but the goals are uniform: to produce cessation of the violent behavior and avoid injury to staff and to the detainee through the use of the least restrictive means necessary. Detainees already occupy cells singly, limiting risk to other detainees. Therefore, the risks considered are to staff and to themselves.

Prior to the employment of any restraints, on site personnel should attempt to dissuade the threatening behavior by providing the detainee with the opportunity to air the grievances, if any, provoking the behavior; firmly insisting on cessation of the behavior; and addressing any reasonable request. Most instances of violent behavior are not the result of a psychosis or other mental disturbance, but rather represent attention seeking behavior in a calculated manner. If the underlying causes can be addressed, escalation to the use of physical force may be avoided.

(b)(3) CIAAct If the detainee is threatening self-harm, staff should follow procedures detailed in

There should be nothing in the cell that could be used as a weapon, but in addition, staff should remove items the detainee might use to hang himself. Staff should maintain regular surveillance and prepare to move into the cell quickly in the event the detainee attempts to hang or otherwise harm himself. If continuous surveillance is not available by video camera or direct observation, physical checks performed every 15 minutes should be undertaken and documented. Psychological evaluation should be sought on an urgent basis, to assess the mental status of the detainee and prepare a therapeutic plan to resolve the situation.

If the detainee is threatening harm to others, or engaging in such activity, OMS advocates the use of physical restraints until such time as the detainee demonstrates the ability to cease such activity. The actual application of such restraints falls within the purview of the guard force, and medical personnel should not participate in such efforts. Restraints used, whether soft restraints or handcuffs, should be placed tight enough to prevent the individual from harming others, but not so tight as to compromise circulation, and should be removed as soon as the situation has been resolved.

In some particularly violent individuals, application of elbow, knee, forearm and foreleg guards may be warranted to prevent the detainee from breaking bones or otherwise harming himself. Headgear, such as football helmets, may also be indicated if the detainee is engaged in head banging activity.

Involuntary medication is regarded in the US as a means of last resort in a detention setting. Should such a course be deemed necessary, it may only be undertaken by a medical officer, and should only be attempted with adequate personnel available to immobilize the detainee to prevent injury, including inadvertent needles sticks or needles breaking off. Approved OMS regimens for involuntary sedation include the following:

1. Begin with the combination of diazepam 5 mg IM, haloperidol 5 mg IM and diphenhydramine 100 mg IM.
2. If little or no effect is noted after 15 minutes, repeat dose of diazepam and haloperidol described in step 1.
3. May repeat step 2 after another 30 minutes have elapsed, for a total of 3 doses, if required due to continued agitation.

The Department of Justice Bureau of Prisons uses the following regimen, which is equally acceptable:

Haloperidol 10 mg plus Cogentin 2 mg plus Ativan 2 mg IM

Ativan can be repeated every hour, and haloperidol plus Cogentin every 8 hours, for a maximum of three doses in 24 hours.

OMS will not delegate the decision to involuntarily medicate detainees to non-medical personnel. In an acute situation, OMS will provide telephonic consultation until such time as a medical officer can arrive on the scene and perform an evaluation.

If involuntary medication is performed, the responsible medical officer should remain at the scene until the detainee is recovered from such administration, and should formulate an ongoing treatment plan, in consultation with appropriate OMS officers.

In the case that the detainee has a known history of a psychiatric disorder, the ordering of this protocol should be amended so that if attempts to verbally de-escalate the situation or a show of force fails to end the violent behavior, voluntary medication should be offered prior to the use of restraints or involuntary medication.

Dental Care

Many inmates enter CIA custody with poor dentition. CTC/RDG has made arrangements with an appropriately cleared dentist to provide urgent dental care on an as needed basis. As more detainees move into a long term custodial setting, OMS will work with CTC/RDG to provide a plan of regular dental care, including dental hygiene.

Immunizations

Provision of adequate care includes prevention of disease where feasible. Immunization provides such an opportunity. The following vaccines are recommended for all detainees, unless medically contraindicated or a reliable history of administration can be determined, as they transition into long-term debriefing and detention:

Td

MMR

Hepatitis B (combined with hepatitis A vaccine if available)

In addition, influenza vaccine should be considered if available.

All persons with hepatitis B or C should receive close attention to appropriate hepatitis immunizations, to reduce risk of additional liver injury.

A careful history will usually elicit a history of having received the usual childhood vaccines (MMR, dT, Polio), and there is usually physical evidence of both BCG and smallpox immunization. Our experience to date has been that after discussion with each detainee, the offered vaccines are usually accepted.

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General references: In addition to standard medical works, medical officers should refer to the Department of Justice Bureau of Prisons website at www.bop.gov, accessing "Central Office", then "Health Services" to view their clinical practice guidelines. These guidelines and policies are useful references for procedures in novel situations.

Other standard references which medical officers may find useful include "Standards for Health Services in Prisons", a regular publication of the National Commission on Correctional Health Care, last revised in 2003. *Clinical Practice in Correctional Medicine*, Michael Puisis, ed. Mosby Publishing, 1998, is a useful compendium of care for chronic and infectious health issues in the prison setting.

Appendix A: Medical rationales for limitations on physical pressures

Measure	Medical Limitation	Rationale for Limitation	References
Shaving	None	Standard hygiene measure in other custodial settings; risk of skin infections	None
Stripping	Ambient air temperature at minimum 64 F/ 18 C	Below this temperature hypothermia may develop	WHO guidelines
Diapering	Evidence of loss of skin integrity due to contact with human waste materials	Diapering commonly employed in hospital and other care settings where incontinence is an issue.	None
Hooding	None; requires careful handling when moving subject because of disorientation and loss of visual and auditory cues.	Methodology used in SERE training	Pre-Academic Laboratory Operating Instructions
Isolation	None	Methodology used in SERE, prison settings	Pre-Academic Laboratory Operating Instructions
White noise	79 dB max	Prevention of permanent hearing damage	OSHA guidelines for continuous noise exposure
Continuous light or darkness	Related to sleep deprivation	Used in other settings	Pre-Academic Laboratory Operating Instructions
Uncomfortably cool environment	<3 hours below 60 F / 16 C, with monitoring for development of hypothermia; use of water will further limit exposure time	Requires monitoring for development of hypothermia; risk is patient-specific	WHO guidelines; "Wilderness Medicine" 4 th Ed., Ch 6 – Accidental Hypothermia; Ch 9 Immersion into cold water
Restricted diet	Loss of 10% of	10% loss indicates	BOP guidelines

**Shacking in
upright sitting
or horizontal
position****Water dousing****Sleep
deprivation**

body weight; or evidence of dehydration 48 hours standard; longer periods require medical monitoring	significant malnutrition and requires corrective action Prolonged standing likely to induce dependent edema, increase risk for DVT, cellulitis.	CTC guidelines; experience with 20+ detainees
Cessation upon evidence of hypothermia; ambient temperature minimum of 64 F / 18 C; potable water source	Increased heat loss promoted by contact with water below 35 C; death can result from prolonged (i.e. 6 hour) exposure to 15 C water, 2 hrs at 10 C, 1 hr at 5 C; hypothermia can be induced in 30 minutes with 5 C / 41 F water, 45 minutes with 10 C / 54 F water, and 60 minutes with 15 C / 59 F water immersion.	“Wilderness Medicine” 4 th Ed., Ch 6 – Accidental Hypothermia; Ch 9 Immersion into cold water; Transport Canada, “Survival in Cold Waters”, PREAL Operating Instructions
48 hours for standard, with minimum 2 hour recovery period	Immersion at temperatures below 25 C / 77 F will eventually be fatal over time.	Periods of sleep deprivation of 90+ hours have been shown to be safe and without long term sequellae in large groups, and 200+ hours in individuals; required recuperative period undefined. Note 0.5 C drop in body temperature, which may impact use of water. Sleep deprivation does degrade cognitive performance, may induce visual disturbances, may reduce immune competence acutely.

Attention grasp	Correct technique; no preexisting injury likely to be aggravated	Risk of head, neck trauma	PREAL Operating Instructions
Facial hold	Correct technique; no preexisting injury likely to be aggravated	Risk of head, neck trauma	PREAL Operating Instructions
Insult slap	Correct technique; no preexisting injury likely to be aggravated	Risk of trauma to facial structures	PREAL Operating Instructions
Abdominal slap	Correct technique; no preexisting injury likely to be aggravated	Risk of trauma to abdominal organs	PREAL Operating Instructions
Stress positions	Correct technique; no preexisting injury likely to be aggravated	Soft tissue trauma to hands, knees, musculoskeletal strains	PREAL Operating Instructions
Walling	Correct technique; no preexisting injury likely to be aggravated	Risk of whiplash type injury, aggravation of spinal, head, chest wall trauma	PREAL Operating Instructions
Cramped confinement	Correct technique; no preexisting injury likely to be aggravated	Attention to risks of immobilization, including DVT, and claustrophobia; ensure adequate air flow, ambient temperature	PREAL Operating Instructions
Waterboard	Correct technique; no preexisting injury likely to be aggravated; no food or fluid intake for at least 4 hours prior to application; resuscitation capability immediately at hand; potable water source	Risks include drowning or near drowning; hypothermia from water exposure; aspiration pneumonia, laryngospasm.	OMS Guidelines;

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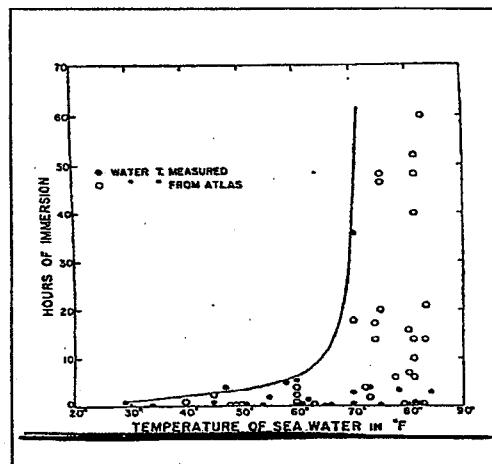


Figure 1 (After Molnar 1946) – Duration of immersion of shipwreck survivors in ocean waters of diverse temperatures. The data are from the files of the Bureau of Medicine and Surgery, US Navy. Open circles, sea-water temperature was measured at time of rescue. Black dots, sea water temperature was obtained from the World Atlas of Sea-Surface Temperatures on the basis of date and location of shipwreck or rescue. Each point represents the survival of at least one person.

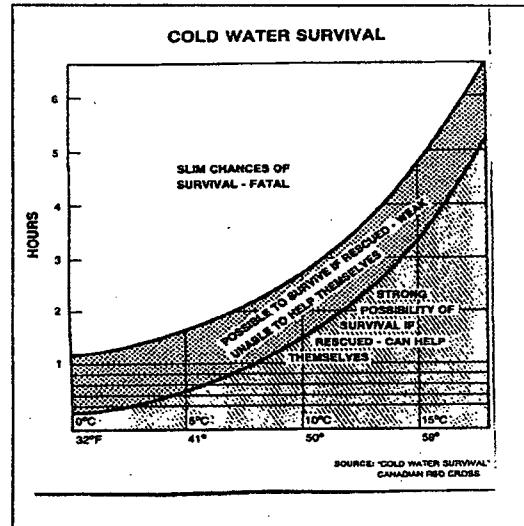


Figure 2 – Cold Water Survival
(Canadian Red Cross)